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Substitute for form 1449/PTC

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Sheet 1

of 10

Complete if Known

Application Number	10/561,712
Filing Date	June 7, 2007
First Named Inventor	James M. Tour
Art Unit	1711
Examiner Name	Unknown
Attorney Docket Number	11321-P069W0US

U. S. PATENT DOCUMENTS

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Examiner Signature	/Satya Sastri/	Date Considered	07/09/2009
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Substitute for form 1449/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Application Number	10/561,712
		Filing Date	June 7, 2007
		First Named Inventor	James M. Tour
		Art Unit	1711
		Examiner Name	Unknown
Sheet	2	of	10
		Attorney Docket Number	11321-P069WOUS

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
/S.S./	1	Tullo, "Synthetic Rubber," Chem. & Eng. News (2003) 81, pp. 23-30	
	2	Tullo, A.H., "A Renaissance in Fluoroelastomers," Chem. & Eng. News (2002) 80, pp. 15-19	
	3	Giannelis et al., "Polymer-Silicate Nanocomposites: Model Systems for Confined Polymers and Polymer Brushes", Adv. Polym. Sci. (1999) 138, pp. 107-147	
	4	Giannelis, E.P. "Polymer Layered Silicate Nanocomposites", Adv. Mater. (1996) 8, pp. 29-35	
	5	Mark, J.E., "Some Simulations on Filler Reinforcement in Elastomers", Molecular Crystals and Liquid Crystals (2002) 374, pp. 29-38	
	6	Fu et al, "Nanoscale Reinforcement of Polyhedral Oligomeric Silsesquioxane (POSS) in Polyurethane Elastomer", Polymer International (2000) 49, pp. 437-440	
	7	LeBaron et al., "Polymer-Layered Silicate Nanocomposites: An Overview", Applied Clay Science (1999) 15, pp. 11-29	
	8	Burnside et al., "Nanostructure and Properties of Polysiloxane-Layered Silicate Nanocomposites", Journal of Polymer Science Part B-Polymer Physics (2000) 38, pp. 1595-1604	
	9	Bahr et al., "Covalent Chemistry of Single-Wall Carbon Nanotubes," J. Mater. Chem. (2002) 12, pp. 1952-1958	
/S.S./	10	Hirsch, "Functionalization of Single-Walled Carbon Nanotubes", Angew. Chem. Int. Ed. (2002) 41, pp. 1853-1859	

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/S.S./	11	Colbert, "Single-Wall Nanotubes: A New Option for Conductive Plastics and Engineering Polymers", Plastics Additives & Compounding (2003) January/February issue	
	12	Baughman et al., "Carbon Nanotubes - A Route Toward Applications", Science (2002) 297, pp. 787-792	
	13	Yakobson et al., "Nanomechanics of Carbon Tubes: Instabilities Beyond Linear Response", Phys. Rev. Lett. (1996) 76, pp. 2511-2514	
	14	Walters et al., "Elastic Strain of Freely Suspended Single-Wall Carbon Nanotubes Ropes", Appl. Phys. Lett. (1999) 74, pp. 3803-3805	
	15	Saito et al., "Physical Properties of Carbon Nanotubes", London: Imperial College Press (1998)	
	16	Salvetat et al., "Elastic and Shear Moduli of Single-Walled Carbon Nanotube Ropes", Phys. Rev. Lett. (1999) 82, pp. 944-947	
	17	Treacy et al., "Exceptionally High Young's Modulus Observed for individual Carbon Nanotubes", Nature (1996) 381, pp. 678-680	
	18	Yu et al., "Tensile Loading of Ropes of Single Wall Carbon Nanotubes and their Mechanical Properties", Phys. Rev. Lett. (2000) 84, pp. 5552-5555	
	19	Yu et al., "Strength and Breaking Mechanism of Multiwalled Carbon Nanotubes Under Tensile Load", Science (2000) 287, pp. 637-640	
/S.S./	20	Rao et al., "Diameter-Selective Raman Scattering from Vibrational Modes in Carbon Nanotubes", Science (1997) 275, pp. 187-191	

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First Named Inventor	James M. Tour
Art Unit	1711
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Attorney Docket Number	11321-P069WOUS

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/S.S./	21	Lourie et al., "Buckling and Collapse of Embedded Carbon Nanotubes", Phys. Rev. Lett. (1998) 81, pp. 1638-1641	
	22	Falvo et al., "Bending and Buckling of Carbon Nanotubes under Large Strain", Nature (1997) 389, pp. 582-584	
	23	Nardelli et al., "Mechanism of Strain Release in Carbon Nanotubes", Phys. Rev. B (1998) 57, pp. 4277-4280	
	24	Mitchell et al., "Dispersion of Functionalized Carbon Nanotubes in Polystyrene", Macromolecules (2002) 35, pp. 8825-8830	
	25	Strano et al., "Electronic Structure Control of Single-Walled Carbon Nanotube Functionalization", Science (2003) 301, pp. 1519-1522	
	26	Gong et al., "Surfactant-Assisted Processing of Carbon Nanotube/Polymer Composites", Chem Mater (2000) 12, pp. 1049-1052	
	27	Jin et al., "Dynamic Mechanical Behavior of Melt-Processed Multi-Walled Carbon Nanotube/Poly(Methyl Methacrylate) Composites", Chem Phys Lett (2001) 337, pp. 43-47	
	28	Zhao et al., "Stress Fields Around Defects and Fibers in a Polymer using Carbon Nanotubes as Sensors", Appl Phys Lett (2001) 78, pp. 1748-1750	
	29	Wood et al., "Carbon Nanotubes: From Molecular to Macroscopic Sensors," Phys Rev B (2000) 62, pp. 7571-7575	
	30	Qian et al., "Load Transfer and Deformation Mechanisms in Carbon Nanotube- Polystyrene Composites", Appl Phys Lett (2000) 76, pp. 2868-2870	

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		Filing Date	June 7, 2007		
		First Named Inventor	James M. Tour		
		Art Unit	1711		
		Examiner Name	Unknown		
Sheet	5	of	10	Attorney Docket Number	11321-P069WOUS

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/S.S./	31	Curran et al., "Evolution and Evaluation of the Polymer Nanotube Composite," Synthetic Metals (1999) 103, pp. 2559-2562	
	32	Lourie et al., "Evidence of Stress Transfer and Formation of Fracture Clusters in Carbon Nanotube-Based Composites", Composites Science and Technology (1999) 59, pp. 975-977	
	33	Wagner et al, "Macrofragmentation and Microfragmentation Phenomena in Composite Materials", Composites Part A-Applied Science and Manufacturing (1999) 30, pp. 59-66	
	34	Garg et al., "Effect of Chemical Functionalization on the Mechanical Properties of Carbon Nanotubes", Chem Phys Lett (1998) 295, pp. 273-278	
	35	Curran et al., "A Composite from Poly(m-Phenylenevinylene-Co-2,5-Dioctoxy-P-Phenylenevinylene) ...", Adv Mater (1998) 10, pp. 1091	
	36	Lourie et al., "Evaluation of Young's Modulus of Carbon Nanotubes by Micro-Raman Spectroscopy", J Mater Res (1998) 13, pp. 2418-2422	
	37	Sinnott et al., "Mechanical Properties of Nanotubule Fibers and Composites Determined from Theoretical Calculations and Simulations," Carbon (1998) 36, pp. 1-9	
	38	Wagner et al., "Stress-Induced Fragmentation of Multiwall Carbon Nanotubes in a Polymer Matrix," Appl Phys Lett (1998) 72, pp. 188-190	
	39	Schadler et al., "Load Transfer in Carbon Nanotube Epoxy Composites", Appl Phys Lett (1998) 73, pp. 3842-3844	
/S.S./	40	Wood et al., "Orientation of Carbon Nanotubes in Polymers and its Detection by Raman Spectroscopy", Composites Part A-Applied Science and Manufacturing (2001) 32, pp. 391-399	

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Sheet 6 of 10

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/S.S./	41	Cooper et al., "Investigation into the Deformation of Carbon Nanotubes and their Composites through the Use of Raman Spectroscopy", Composites Part a-Applied Science and Manufacturing (2001) 32, pp. 401-411	
	42	Cooper et al., "Investigation of Structure/Property Relationships in Particulate Composites through the Use of Raman Spectroscopy," Journal of Raman Spectroscopy (1999), 30, pp. 929-938	
	43	Jin et al., "Nonlinear optical properties of some polymer/multi-walled carbon nanotube composites," Chem Phys Lett (2000) 318, pp. 505-510	
	44	Barraza et al., "SWNT-filled thermoplastic and elastomeric composites prepared by miniemulsion polymerization", Nano Letters (2002) 2, pp. 797-802	
	45	Dufresne et al., "Processing and characterization of carbon nanotube/poly(styrene-co-butyl acrylate) nanocomposites," J of Materials Science (2002), 37, pp. 3915-3923	
	46	Steuerman et al., "Interactions between conjugated polymers and single-walled carbon nanotubes," J of Physical Chemistry B (2002) 106, pp. 3124-3130	
	47	Kymakis et al., "Single-walled carbon nanotube-polymer composites: electrical, optical and structural investigation," Synthetic Metals (2002) 127, pp. 59-62	
	48	Wei et al., "Thermal expansion and diffusion coefficients of carbon nanotube-polymer composites," Nano Letters (2002) 2, pp. 647-650	
	49	Grady et al., "Nucleation of polypropylene crystallization by single-walled carbon nanotubes," J of Physical Chemistry B (2002) 106, pp. 5852-5858	
/S.S./	50	Alexandrou et al., "Polymer-nanotube composites: Burying nanotubes improves their field emission properties," Applied Physics Letters (2002) 80, pp. 1435-1437	

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	52	Liao et al., "Interfacial characteristics of a carbon nanotube-polystyrene composite system," Applied Physics Letters (2001) 79, pp. 4225-4227	
	53	Putz et al., "Elastic Modulus of Single - Walled Carbon Nanotube - PMMA Nanocomposites." J. Polym. Sci. Part B: Polym. Phys., (2004) 42, pp. 22862293	
	54	Benoit et al., "Transport properties of PMMA-carbon nanotubes composites," Synthetic Metals (2001) 121, pp. 1215-1216	
	55	Stephan et al., "Characterization of singlewalled carbon nanotubes-PMMA composites," Synthetic Metals (2000) 108, pp. 139-149	
	56	Frogley et al., "Mechanical properties of carbon nanoparticle-reinforced elastomers," Composites Science & Technol. (2003) 63, pp. 1647-1654	
	57	Ebbesen, "Annu. Rev. Mater. Sci. (1994) 24, pp. :235-264	
	58	Thess, et al., " Science (1996) 273, pp. 483-487	
	59	Vander Wal, et al., " Chem. Phys. Lett. (2001) 349, pp. 178-184	
/S.S./	60	Hafner et al., " Chem. Phys. Lett. 1998, 296, pp. 195-202	

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	62	Nikolaev, et al. Chem. Phys. Lett. (1999) 313, pp. :91-97	
	63	O'Connell, et al. Science (2002) 297, pp. 593-596	
	64	Bachilo, et al. Science (2002) 298, pp. 2361-2366	
	65	Strano, et al. Science (2003) 301, pp. 1519-1522	
	66	Chiang, et al. J. Phys. Chem. B (2001) 105, pp. 1157-1161;	
	67	Chiang, et al. J. Phys. Chem. B (2001) 105, pp. :8297-8301	
	68	Liu, et al. Science (1998) 280, pp. 1253-1256	
	69	Gu, et al. Nano Lett. (2002) 2, pp. 1009-1013	
/S.S./	70	Bahr et al., "Highly Functionalized Carbon Nanotubes using in Situ Generated Diazonium Compounds," Chem Mater (2001) 13, pp. :3823	

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/S.S./	71	Bahr et al., "Functionalization of carbon nanotubes by Electrochemical Reduction of Aryl Diazonium Salts: A bucky paper electrode," JACS (2001) 123, pp. 6536-6542	
	72	Bahr et al., "Dissolution of small diameter single-wall carbon nanotubes in organic solvents?" Chemical Communications (2001) pp. 193-194	
	73	Ausman et al., "Organic Solvent Dispersions of Single-Walled Carbon Nanotubes: Toward Solution of Pristine Nanotubes," J. Phys. Chem. B (2000) 104, pp. 8911-8915	
	74	Bai et al., "Bulk Rigid-Rod Molecular Composites of Articulated Rod Copolymers with Thermoplastic pendants," J. Polym. Sci.:Part B: Polym. Phys. (1992) 30, pp. 1515-1525	
	75	Reich et al., "Tight-Binding Description of Graphene," Physical Review B (2002) 66	
	76	Girfalco et al., "Van der Waals binding energies in graphitic structures," Physical Review B (2002) 65	
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	78	Tanaka et al., "Solvent-free organic synthesis," Chemical Reviews (2000) 100, pp. 1025-1074	
	79	Dyke et al., "Solvent-Free Functionalization of Carbon Nanotubes," Journal of the American Chemical Society (2003) 125, pp. 1156-1157	
/S.S./	80	Dyke et al., "Unbundled and Highly Functionalized Carbon Nanotubes from Aqueous Reactions," Nano Letters (2003) 3, pp. 215-1218	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete If Known			
		Application Number	10/561,712		
		Filing Date	June 7, 2007		
		First Named Inventor	James M. Tour		
		Art Unit	1711		
		Examiner Name	Unknown		
Sheet	10	of	10	Attorney Docket Number	11321-P069WOUS

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/S.S./	81	Hudson et al., "Water Soluble, Exfoliated, Non-Roping Single Wall Carbon Nanotubes," J. Am. Chem. Soc. (2004) 126, pp. 11158-11159	
/S.S./	82	Yakabson et al., "High Strain Rate Fracture and C-chain Unraveling in Carbon Nanotubes," Computational Materials Science (1997) 8, pp. 341-348	
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/S.S./	85	Sano et al., "Ring Closure of Carbon Nanotubes," Science (2001) 293, pp. 1299-1301	

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